Economics of Nissan Stadium Renovation/Replacement

J.C. Bradbury

Professor of Economics

Kennesaw State University

E-mail: jcbradbury@kennesaw.edu

Website: https://sites.google.com/view/jcbradbury

Brief Bio: J.C. Bradbury

Professor of Economics
Kennesaw State University, 2006-present

University of the South, 2001-2006

President
North American Association of Sports Economists (NAASE)

Associate Editor
Journal of Sports Economics

CV

What do economists know about the economics of stadiums?

- "The large and growing peer-reviewed economics literature on the economic impacts of stadiums, arenas, sports franchises, and sport megaevents has consistently found no substantial evidence of increased jobs, incomes, or tax revenues for a community associated with any of these things."

– Coates, D., & Humphreys, B. R. (2008)

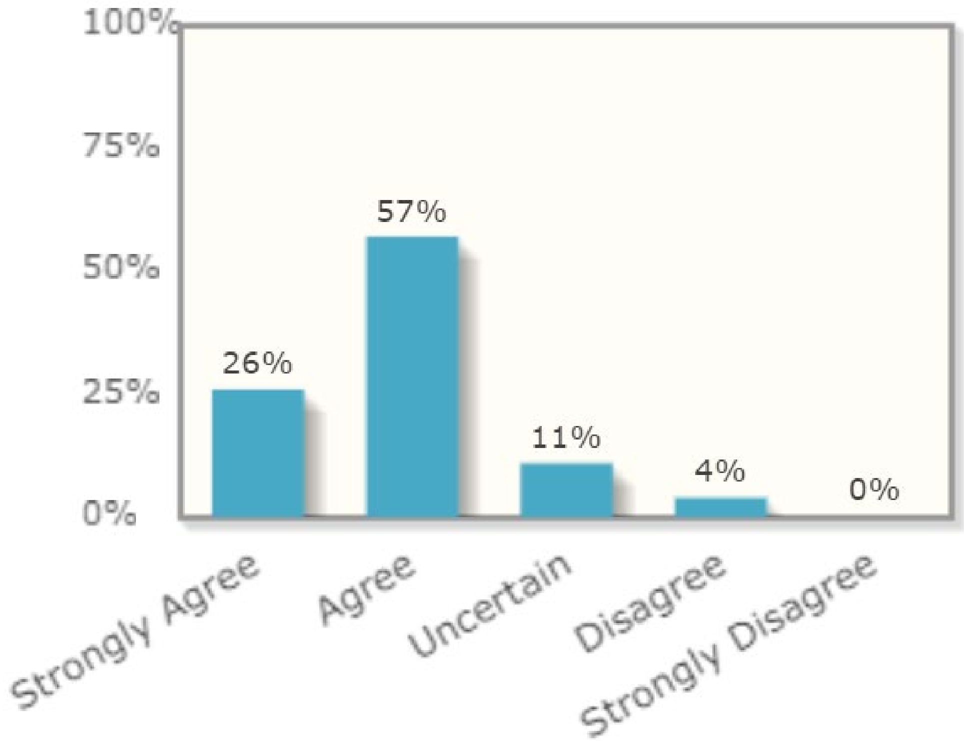
Do economists reach a conclusion on subsidies for sports franchises, stadiums, and mega-events. *Econ Journal Watch* (link)

- "nearly all empirical studies find little to no tangible impacts of sports teams and facilities on local economic activity, and the level of venue subsidies typically provided far exceeds any observed economic benefits."

– Bradbury, J.C., Coates, D. & Humphreys. B.R. (2022)

The impact of professional sports franchises and venues on local economies: A comprehensive survey, *Journal of Economic Surveys* (link)

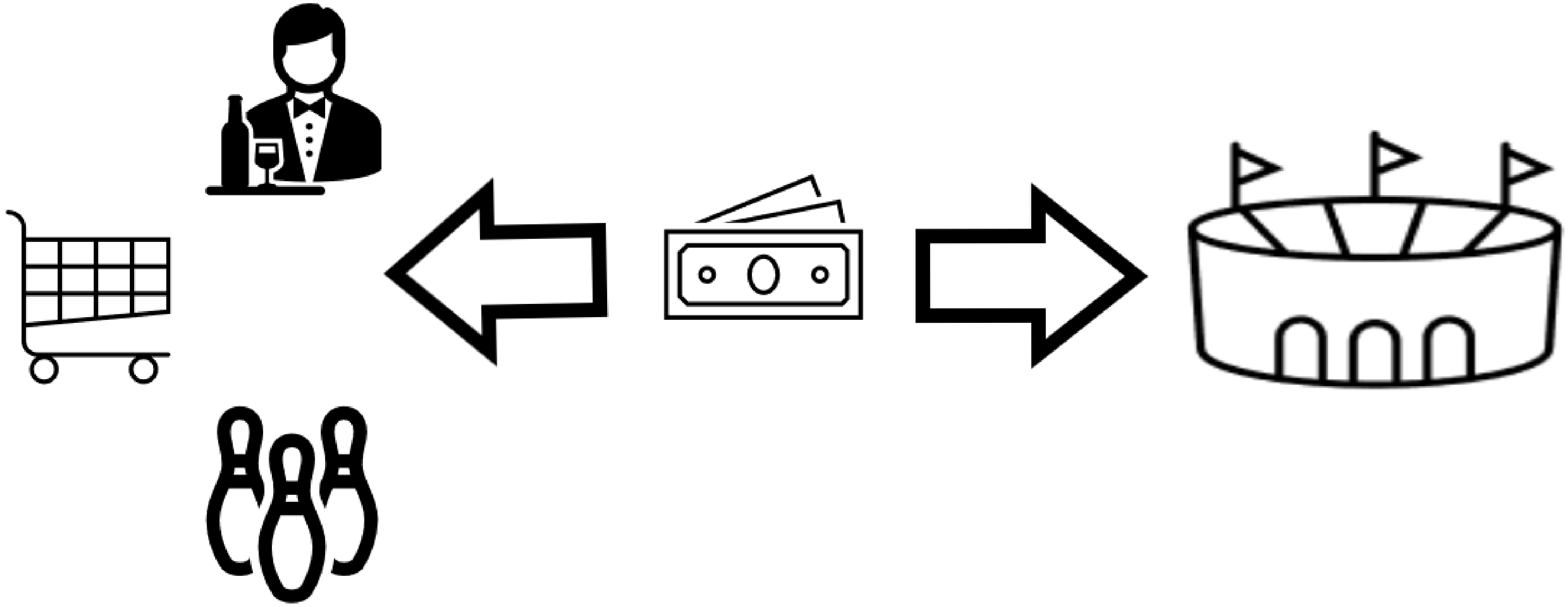
University of Chicago Survey of Economic Experts



Providing state and local subsidies to build stadiums for professional sports teams is likely to cost the relevant taxpayers more than any local economic benefits that are generated. (link)

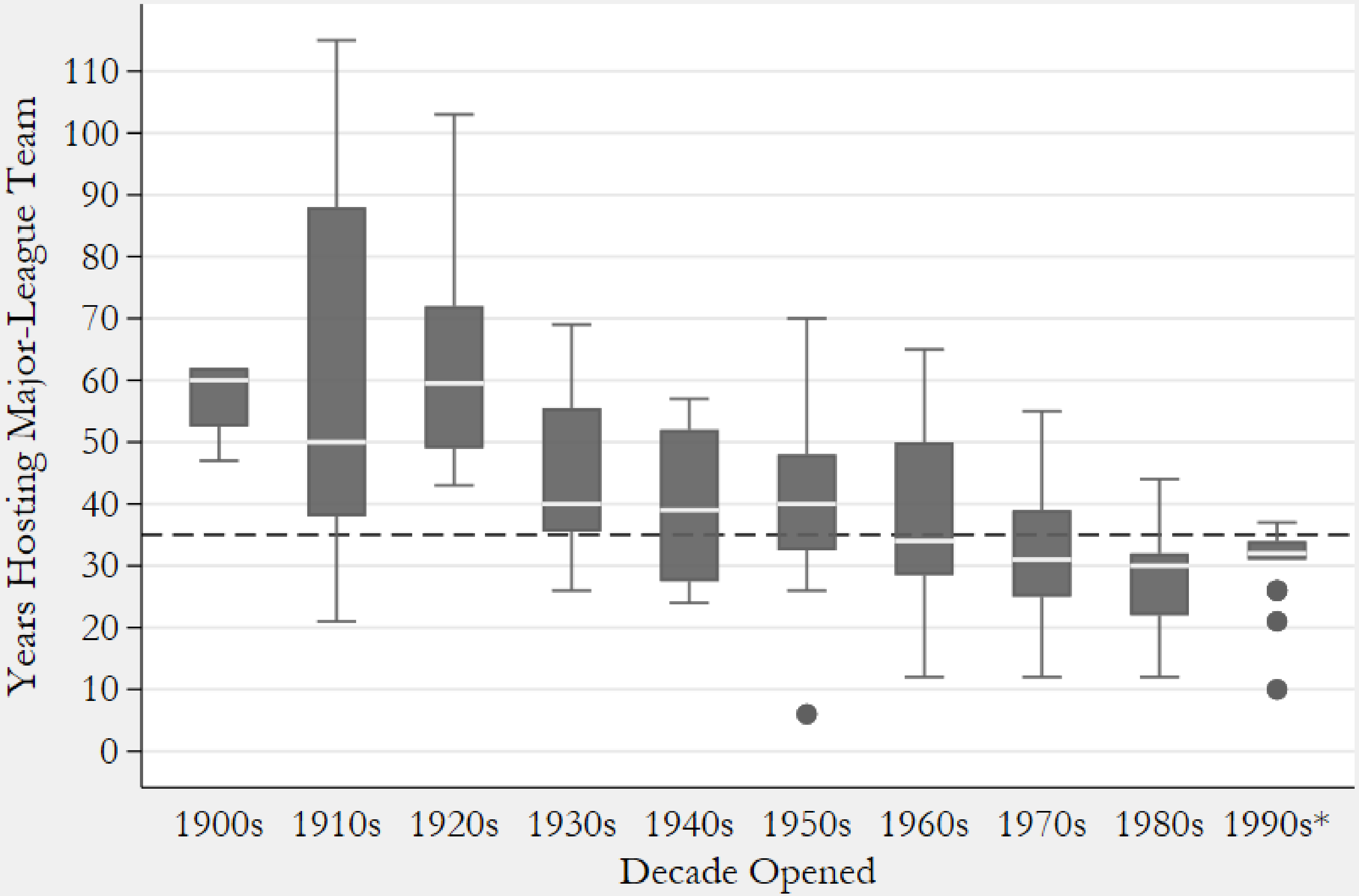
Why don’t stadiums foster economic development?

- Spending at sports events is mostly reallocated local spending
- No new economic activity to generate economic activity or added tax revenue.



What is the typical stadium lifespan?

- ~30-35 years hosting major-league team
- Age of replacement has declined
- Useful life is longer
- Many replaced stadiums continue to host other events

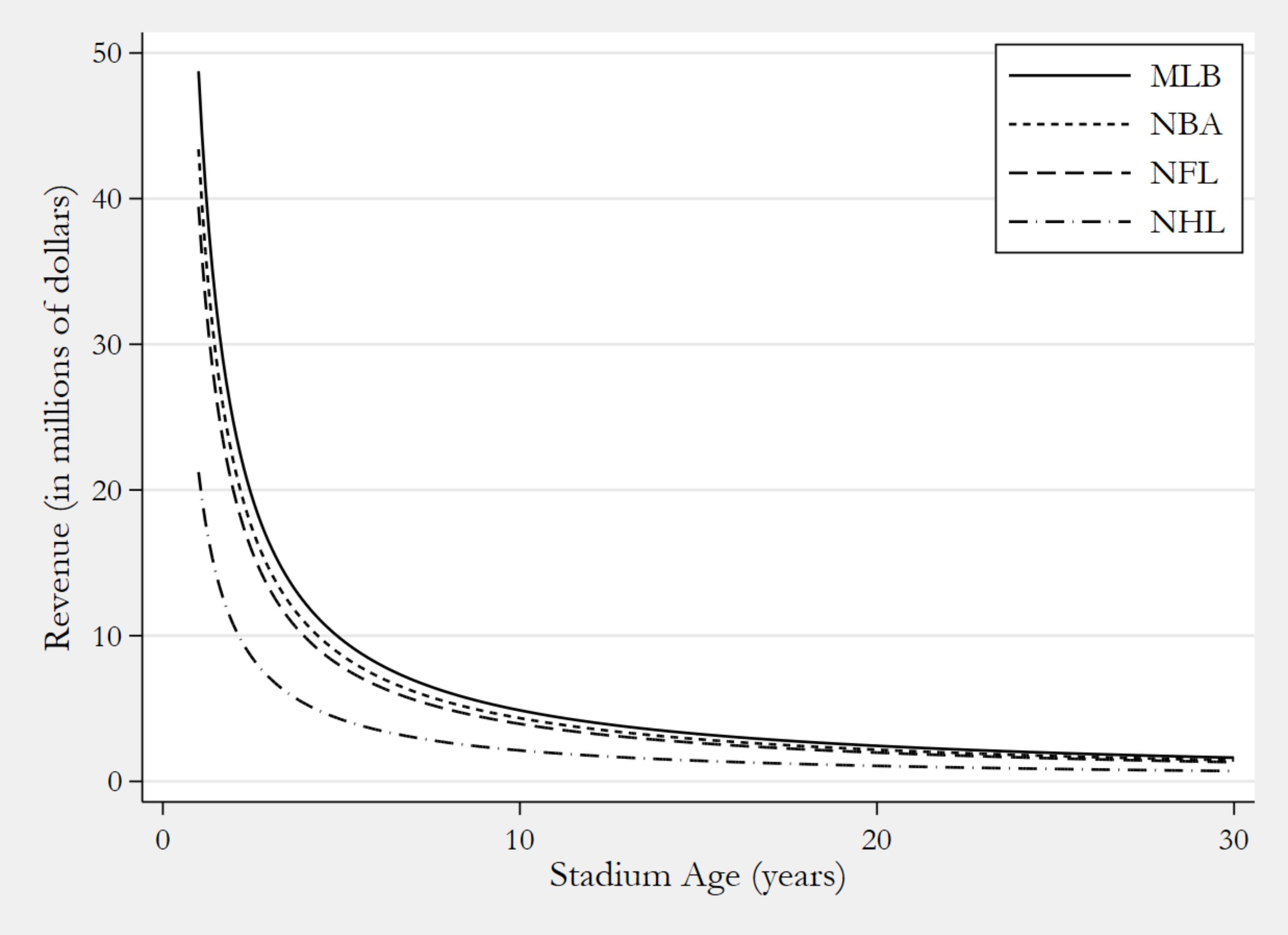


Dashed line denotes sample median of 35 years.
*Includes venues open prior to 1997 and venues scheduled to close by 2026.

Source: Data collected by author as part of ongoing research project.

Why do teams replace functional stadiums?

- “Novelty/ Honeymoon Effect”
- Revenue boost from new stadium
  - Fan curiosity
  - Designed for recent consumer tastes ➔ new revenue streams from up-to-date luxury amenities and fan experiences
- After 10 years revenue is ~10% of inaugural season



Source: Bradbury, J. C. (2019). Determinants of revenue in sports leagues: An empirical assessment. *Economic Inquiry* (link)

The Choice as Presented

- Renovate Nissan Stadium
  - Metro cost: $1.9 billion
- Build new stadium dome
  - Metro cost: $760 million

- $1.9 billion > $760 million
  - New stadium appears better deal, *by this calculation*

How reasonable are these estimates?

Comparable Facilities in 1996 Lease

"Comparable Facilities" shall mean first-class sporting and entertainment stadiums that are

(a) comparable to the Facilities,

(b) of similar age (*i.e.*, completed within ten years before or after the Substantial Completion Date) to that of other Facilities and

(c) located in major metropolitan areas of the United States, including other football stadiums in which NFL games are played; provided that the following stadiums shall be deemed to be Comparable Facilities: Carolinas Stadium in Charlotte; Jacksonville Stadium in Jacksonville; Joe Robbie Stadium in the Miami area; Coors Field in Denver; Jacobs Field in Cleveland; The Ballpark at Arlington in Arlington; Oriole Park at Camden Yards in Baltimore; Comiskey Park in Chicago; Olympic Stadium in Atlanta; and BancOne Stadium in Phoenix.

List of 24 Comparable Venues

Similar Age (± 10 years)	Team	Open
Lucas Oil Stadium	Indianapolis Colts	2008
State Farm Stadium	Arizona Cardinals	2006
Lincoln Financial Field	Philadelphia Eagles	2003
Ford Field	Detroit Lions	2002
Gillette Stadium	New England Patriots	2002
Lumen Field	Seattle Seahawks	2002
NRG Stadium	Houston Texans	2002
Heinz Field	Pittsburgh Steelers	2001
Empower Field Mile High	Denver Broncos	2001
Paul Brown Stadium	Cincinnati Bengals	2000
FirstEnergy Stadium	Cleveland Browns	1999
M&T Bank Stadium	Baltimore Ravens	1998
Raymond James Stadium	Tampa Bay Buccaneers	1998
FedEx Field	Washington Commanders	1997

Listed Venue (active)	Team	Open
Chase Field (BancOne)	Arizona Diamondbacks	1998
Bank of America Stadium	Carolina Panthers	1996
TIAA Bank Field	Jacksonville Jaguars	1995
Coors Field	Colorado Rockies	1995
Progressive Field (Jacobs)	Cleveland Guardians	1994
Oriole Park at Camden Yards	Baltimore Orioles	1992
Guaranteed Rate (Comiskey)	Chicago White Sox	1991
Hard Rock (Joe Robbie)	Miami Dolphins	1987

Listed Venue (replaced)			Replacement Year	Replacement Cost*
~~The Ballpark at Arlington~~	Texas Rangers	1994	2020 *Public (%):*	$1,200 *$500 (42%)*
~~Turner Field (Olympic)~~	Atlanta Braves	1996	2017 *Public (%):*	$672 *$300 (44%)*

* In millions

- **17 NFL stadiums in bold**
- 5 MLB stadiums (active)
- 2 MLB stadiums (replaced)

First Class Condition in 1996 Lease

"First Class Condition" shall mean the condition satisfying each of the following:

(a) being in compliance with Applicable Law,

(b) <u>being in good condition and repair, normal wear and tear excepted</u>, and

(c) having the <u>level of improvements and new technology from time to time found at a reasonable number of Comparable Facilities</u>, provided that, with respect to improvements and new technology that perform a completely new function rather than being a replacement, upgrade or enhancement of then existing portions of the Facilities, this clause (c) shall be limited to the level of improvements and new technology that at the time in question have been successfully <u>implemented in a majority of Comparable Facilities</u>.

A word about cost accounting over time

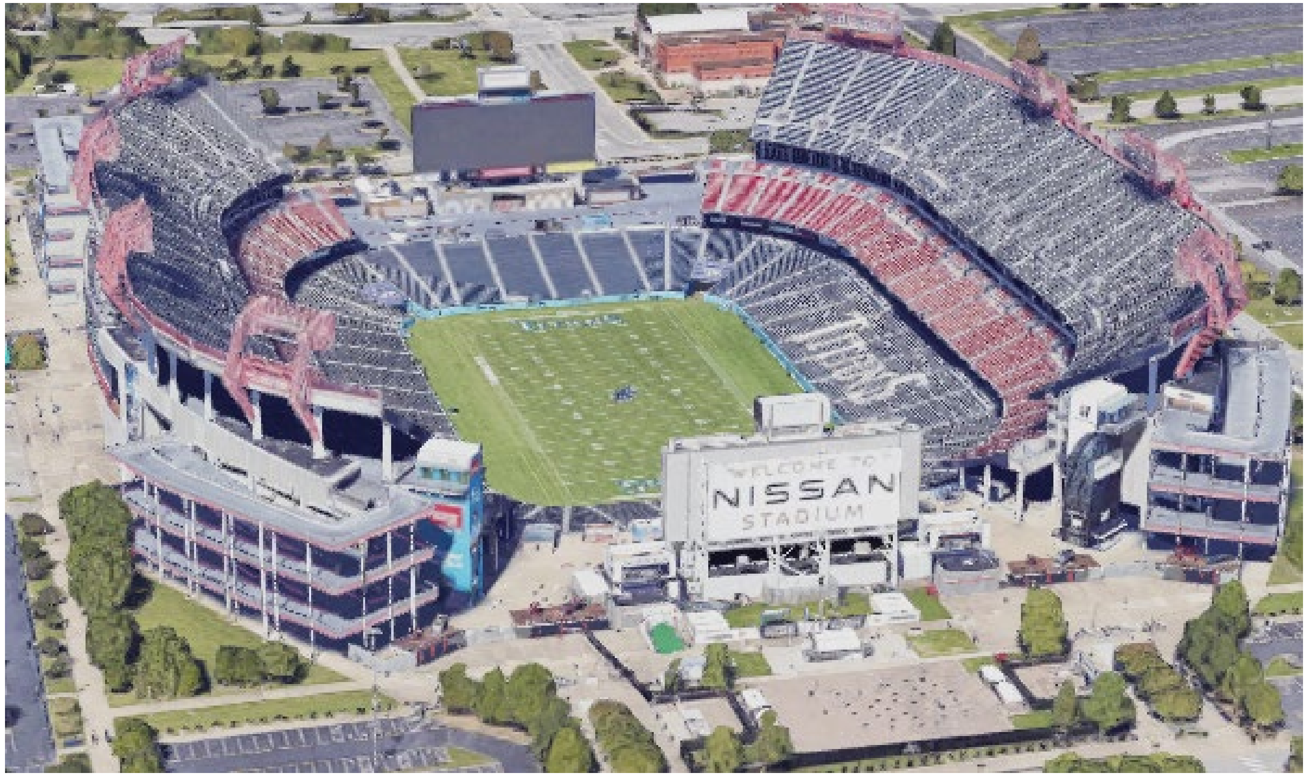
- Current dollars: Nominal price cost at time of expenditure
- Real dollars: Equivalent purchasing power of dollar across time
  - Opportunity cost of consumption (Comparing construction costs of stadiums)
    - What could equivalent tax dollars have purchased?
    - Consumer Price Index (CPI) reflects opportunity cost of consumption in 2020 dollars
  - Reflects equivalent costs of construction (Projecting renovation costs)
    - What does it cost to build/renovate stadium?
    - Producer Price Index (PPI) reflects anticipated stadium construction costs in 2023 dollars
      - PPI commodity data for construction-maintenance and repair of nonresidential buildings

Last Major Renovation Comparable Stadiums

Venue	Team	Year Opened	Year Renovated	Renovation Cost Current	Renovation Cost 2023*	Renovation Cost Future	Construction Cost Current	Construction Cost 2020**
Lucas Oil Stadium	Indianapolis Colts	2008	.	.	.	.	$720	$864
State Farm Stadium	Arizona Cardinals	2006	2023	$100	$100	.	$395	$506
Lincoln Financial Field	Philadelphia Eagles	2003	2014	$125	$190	.	$360	$508
Ford Field	Detroit Lions	2002	2017	$100	$144	.	$430	$619
Gillette Stadium	New England Patriots	2002	2023	$225	$225	.	$325	$468
Lumen Field	Seattle Seahawks	2002	.	.	.	.	$360	$518
NRG Stadium	Houston Texans	2002	.	.	.	.	$425	$612
Heinz Field	Pittsburgh Steelers	2001	.	.	.	.	$261	$381
Empower Field at Mile High	Denver Broncos	2001	.	.	.	.	$400	$584
Paul Brown Stadium	Cincinnati Bengals	2000	.	.	.	.	$450	$675
FirstEnergy Stadium	Cleveland Browns	1999	2015	$125	$185	.	$311	$482
Nissan Stadium	**Tennessee Titans**	**1999**	.	.	.	.	**$258**	**$400**
M&T Bank Stadium	Baltimore Ravens	1998	2019	$120	$164	$600	$220	$350
Raymond James Stadium	Tampa Bay Buccaneers	1998	2018	$160	$226	.	$169	$269
Chase Field	Arizona Diamondbacks	1998	.	.	.	$500	$354	$563
FedEx Field	Washington Commanders	1997	.	.	.	.	$180	$290
Bank of America Stadium	Carolina Panthers	1996	2017	$90	$129	.	$187	$309
TIAA Bank Field	Jacksonville Jaguars	1995	2016	$90	$131	.	$145	$247
Coors Field	Colorado Rockies	1995	.	.	.	$200	$197	$335
Progressive Field	Cleveland Guardians	1994	.	.	.	$435	$176	$308
Oriole Park at Camden Yards	Baltimore Orioles	1992	.	.	.	$600	$106	$195
Guaranteed Rate Field	Chicago White Sox	1991	2008	$118	$199	.	$187	$355
Hard Rock Stadium	Miami Dolphins	1987	2017	$350	$503	.	$115	$262
Mean					***$200***	***$467***		$439
Median					***$185***	***$500***		$400

Dollars in millions. *Estimated from PPI commodity data for construction-maintenance and repair of nonresidential buildings. **CPI for all urban consumers.
Mean and median excluding stadiums with no reported renovation costs.

Nissan Stadium



Sample of Comparable Stadiums

Last Major Capital Renovation*	
Past/Present	11
Mean	$200
Median	$185
Middle 25th-75th percentile:	$135-$212
Planned**	5
Mean	$467
Median	$500
Middle 25th-75th percentile:	$435-$600
No Major Renovations	7

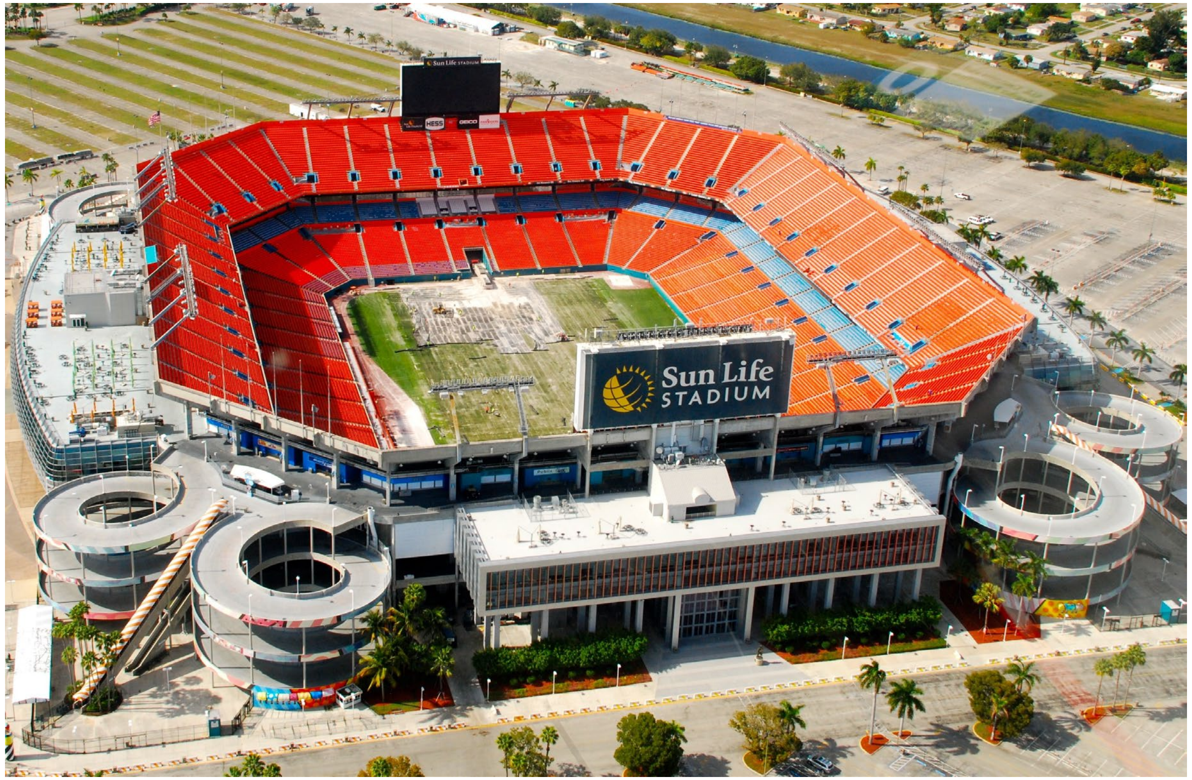
Real 2023 dollars in millions.

* Renovations of ~$100 million or more.

**Includes speculative allocations.

VSG Comparable Facility

Joe Robbie/ Hard Rock Stadium
Pre-Renovation



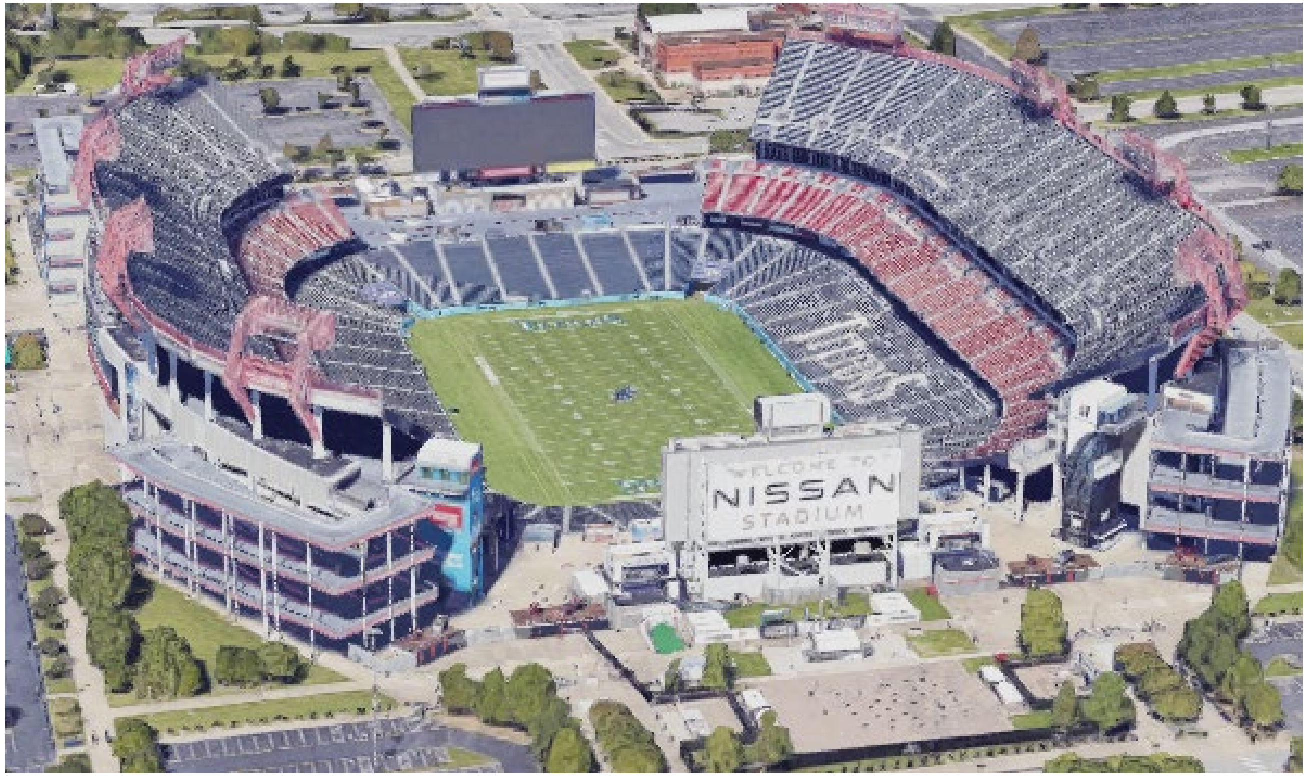
"In our professional opinion, Hard Rock Stadium is the closest NFL comparative example with which to test against the proposed components of the Titans' master plan."

Hard Rock Stadium
Post-Renovation

Reported costs (by VSG):
2015-2017: $550 million (current), $809 million (2023)

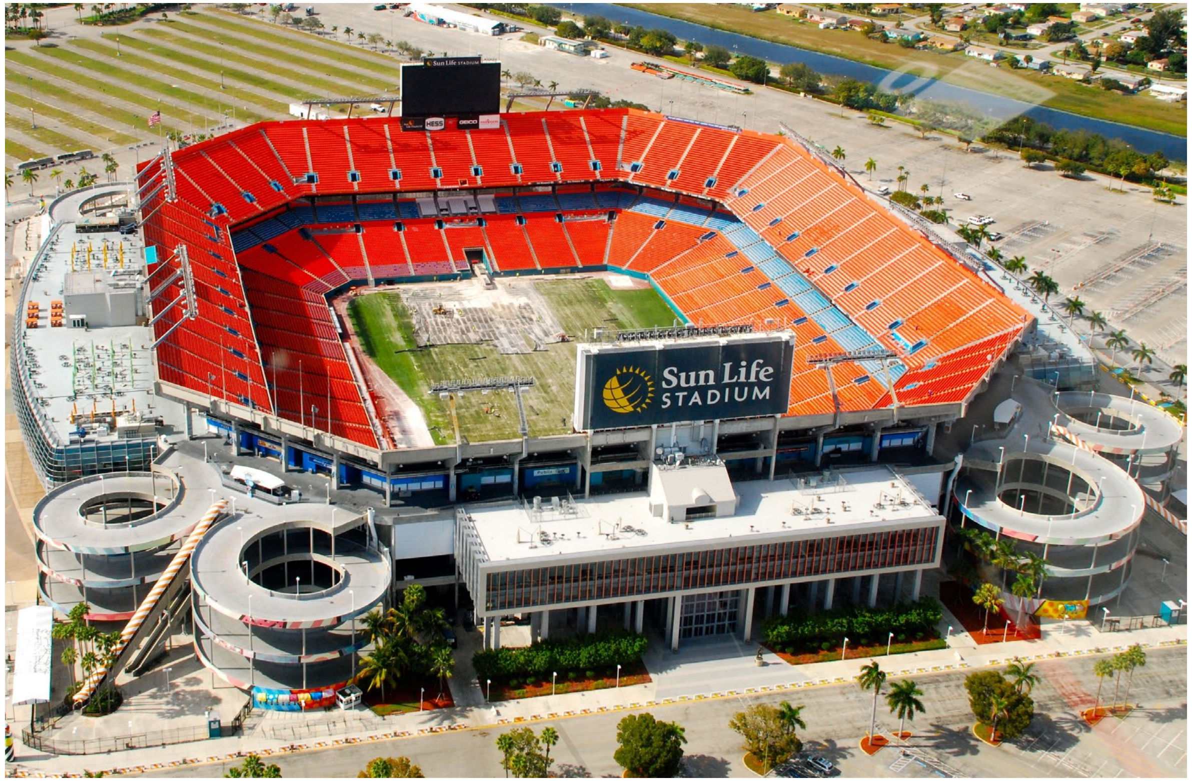
(Source: "Miami Dolphins teams meeting on 10-10-2022")

Nissan Stadium



- Opened: 1999
- Cost: $258 million (current), $400 million (2020)

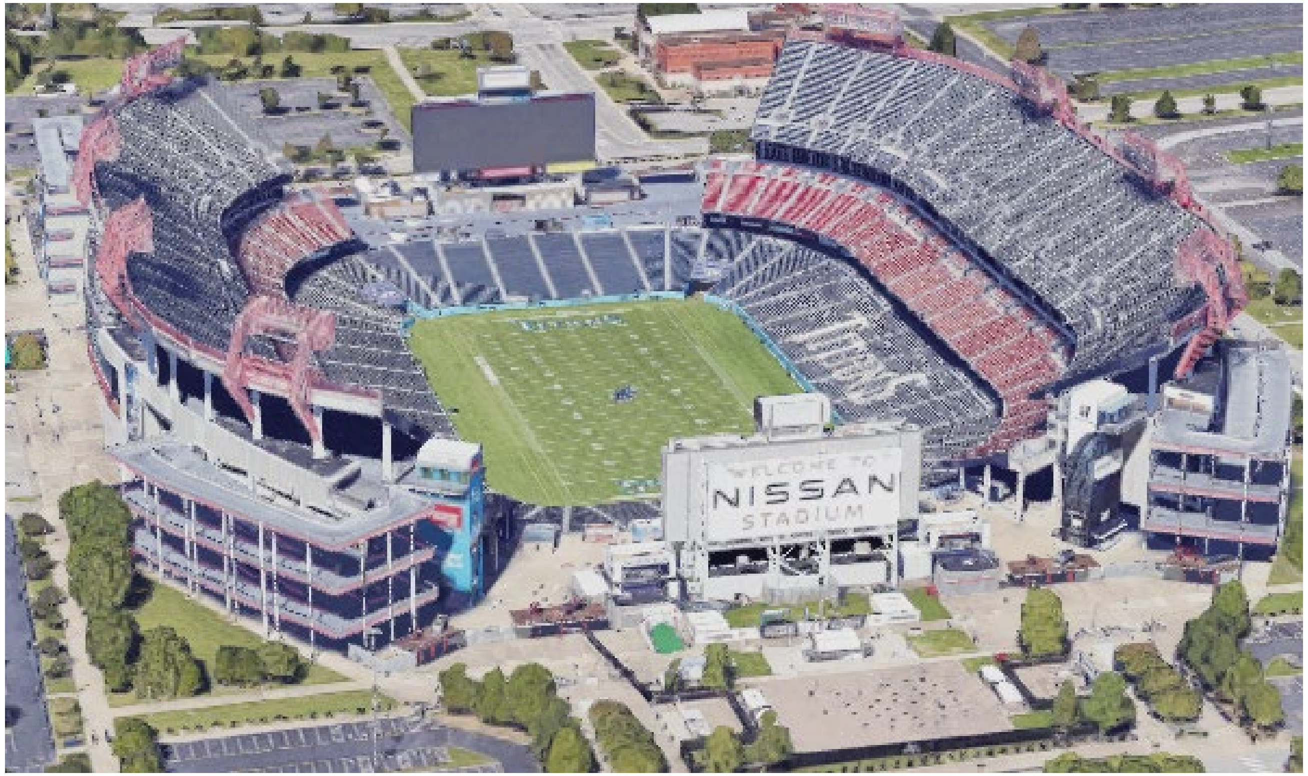
Hard Rock Stadium Pre-Renovation



- Opened: 1987
- Cost: $115 million (current), $262 million (2020)
- 1993: Renovated to host baseball
- 2015-2017: Last major renovation
    - Re-converted to full-time football stadium
    - $350 million (current), $503 million (2023)

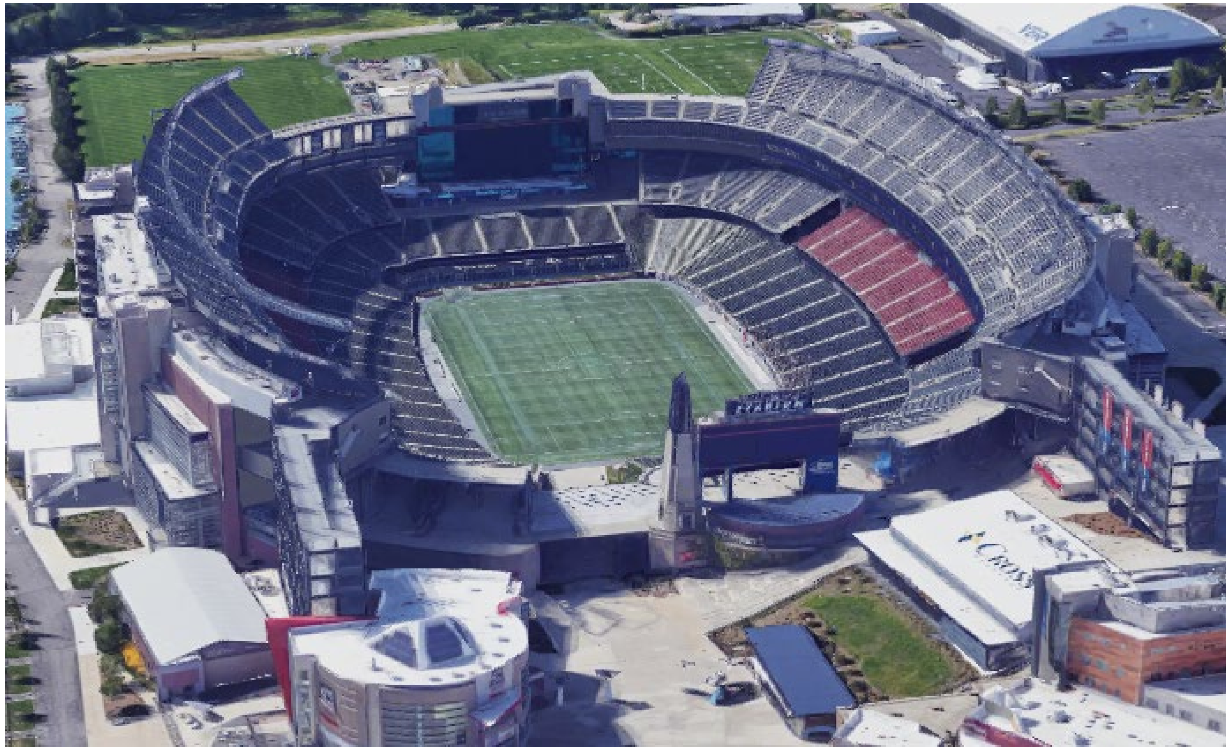
Photo credits: Google Maps, Gunther Hagleitner

Nissan Stadium



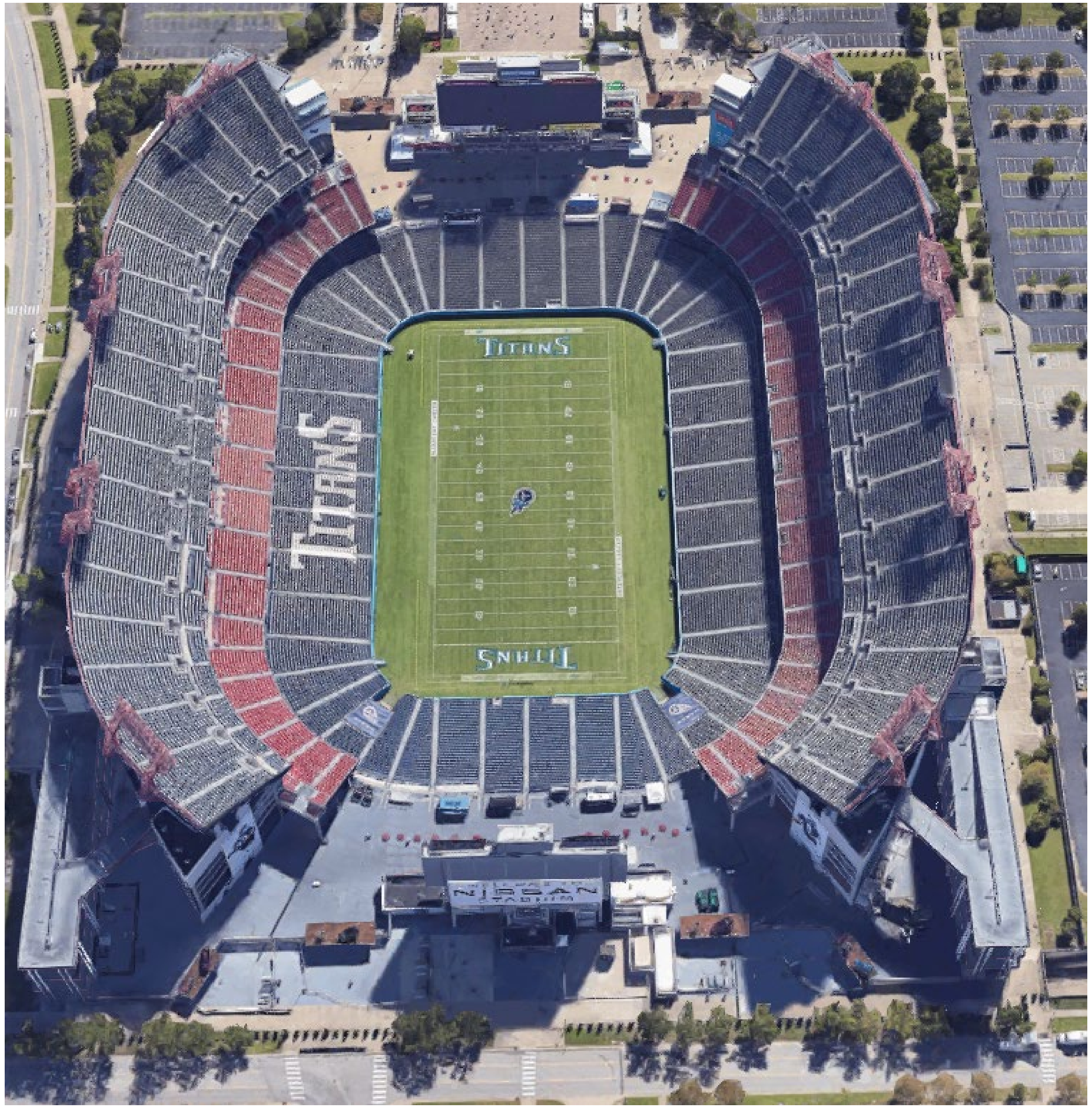
- Opened: 1999
- Cost: $258 million (current), $400 million (2020)

Gillette Stadium

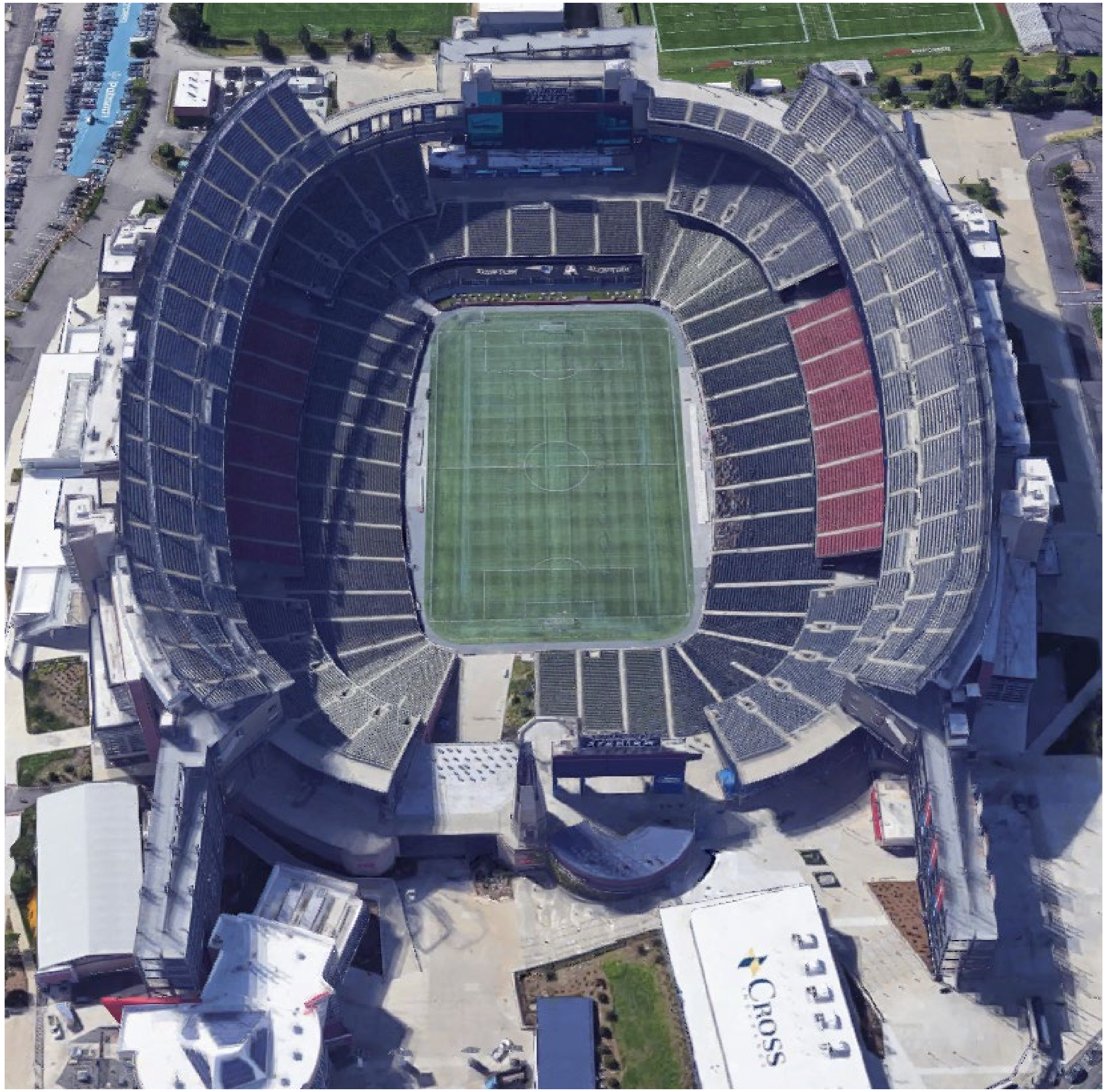


- Opened: 2002
- Cost: $325 million (current) $468 million (2020)
- 2023: $225 million renovation (link)

Nissan Stadium



Gillette Stadium



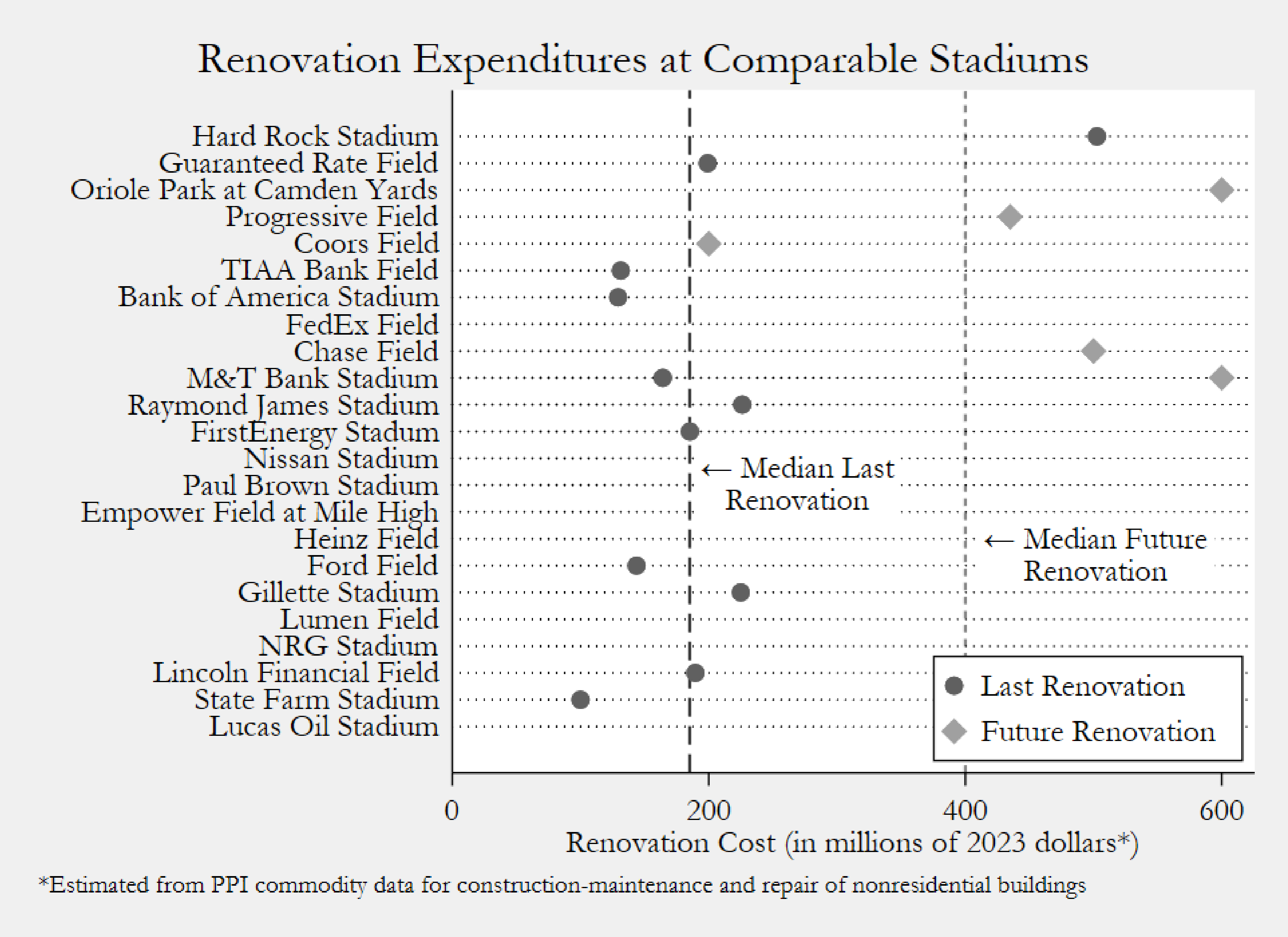
VSG Nissan Stadium Renovation Evaluation

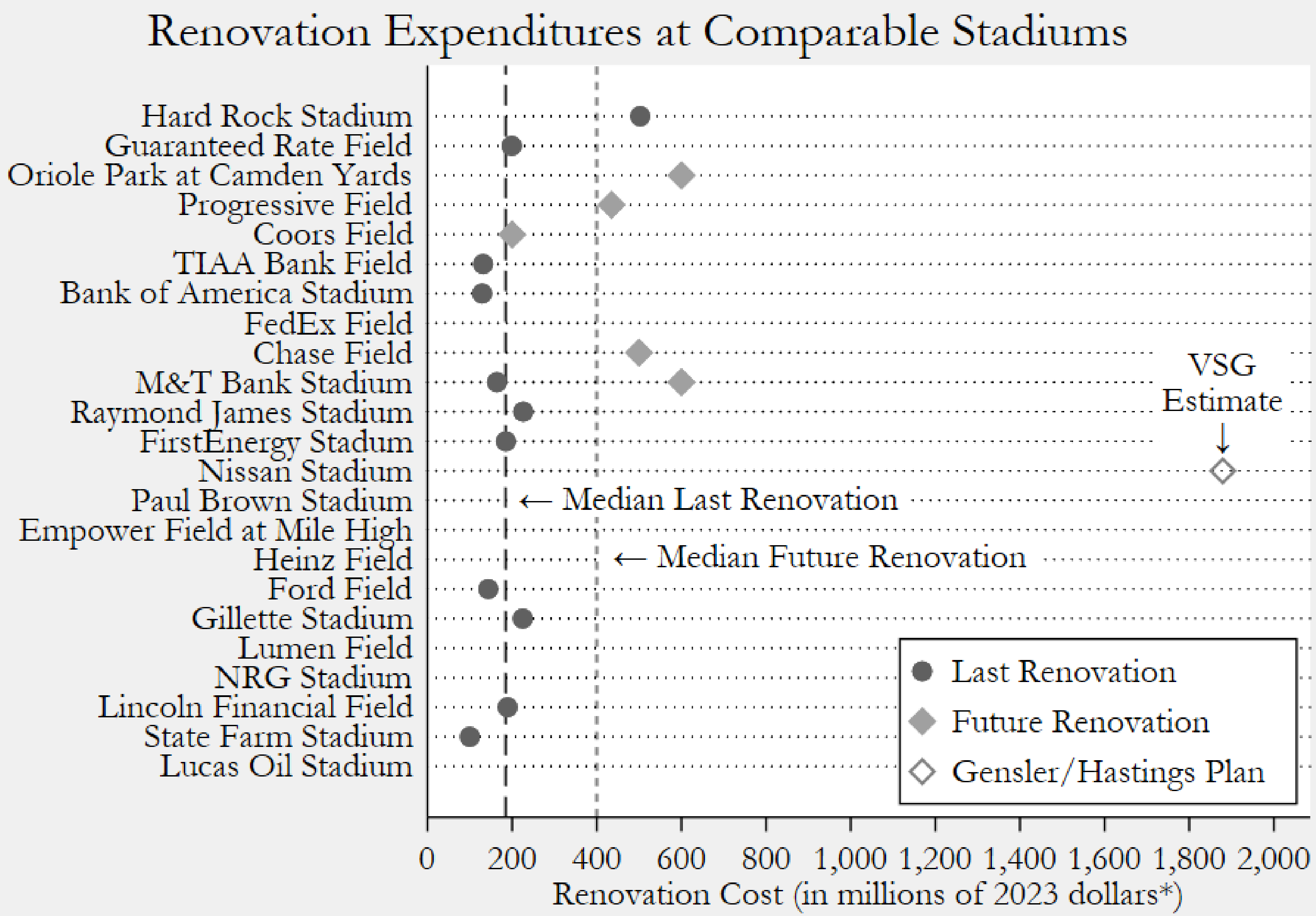
Nissan Stadium
Pre-Renovation

Gensler/Hastings
Proposed Renovation

"We believe the Gensler / Hastings Plan provides a reasonable basis for what would be required in a plan that meets that standard."

<u>Gensler/Hastings Conceptual Design Package 2021:</u>
Total Renovation Cost = $1,878,992,222
Post-Renovation Costs (2027-2039) = $ 235,080,061


Renovation Expenditures at Comparable Stadiums
Hard Rock Stadium
Guaranteed Rate Field
Oriole Park at Camden Yards
Progressive Field
Coors Field
TIAA Bank Field
Bank of America Stadium
FedEx Field
Chase Field
M&T Bank Stadium
Raymond James Stadium
FirstEnergy Stadium
Nissan Stadium
Paul Brown Stadium
Empower Field at Mile High
Heinz Field
Ford Field
Gillette Stadium
Lumen Field
NRG Stadium
Lincoln Financial Field
State Farm Stadium
Lucas Oil Stadium
← Median Last Renovation
← Median Future Renovation
Last Renovation
Future Renovation
0
200
400
600
Renovation Cost (in millions of 2023 dollars*)
*Estimated from PPI commodity data for construction-maintenance and repair of nonresidential buildings



*Estimated from PPI commodity data for construction-maintenance and repair of nonresidential buildings

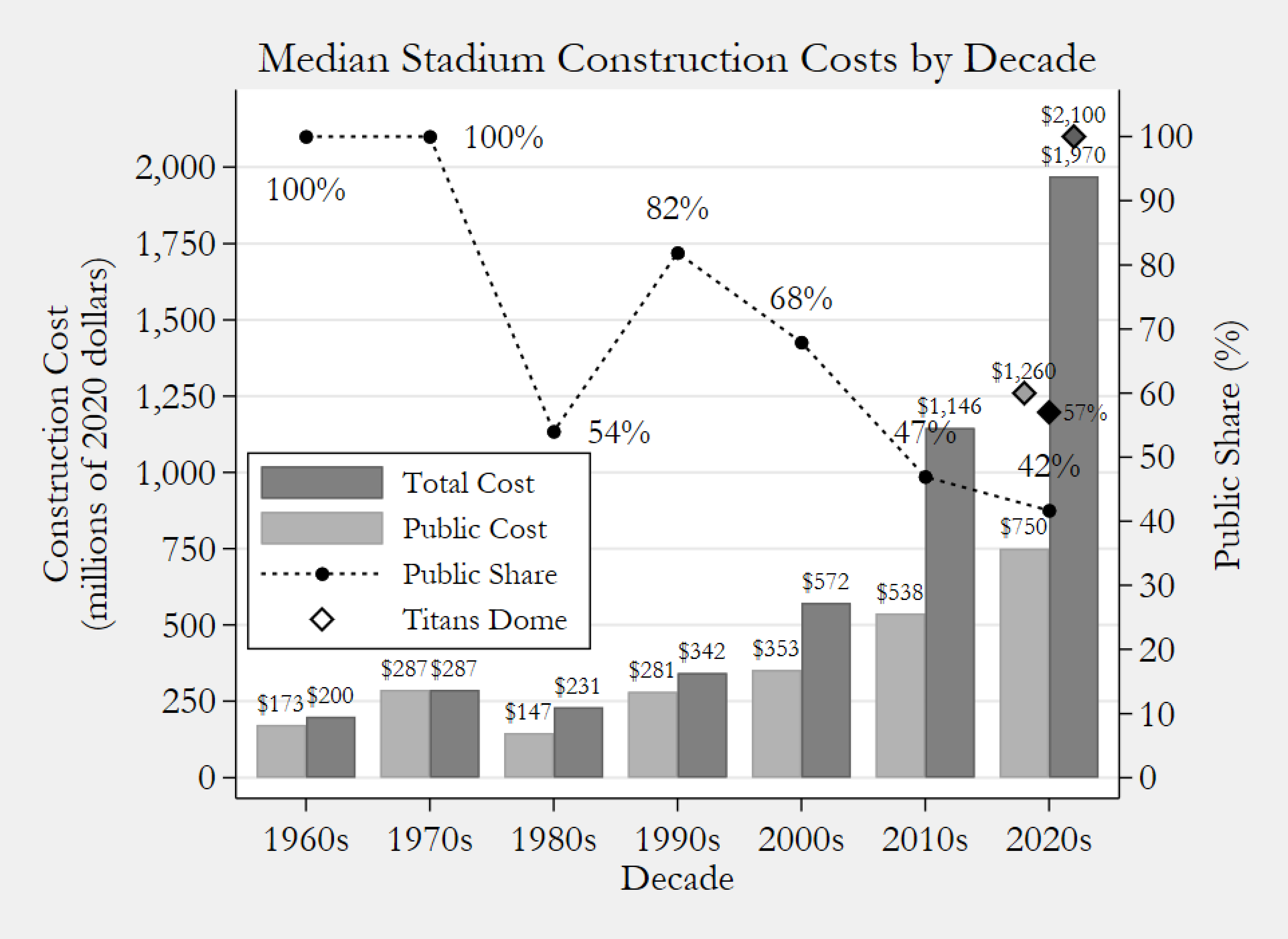
Conclusion on Renovation Cost Estimate

- Renovation costs of comparable facilities: ~$200 million
- $1.879 billion renovation estimate far exceeds renovation costs experienced at comparable facilities
- The Gensler/Hastings plan does not provide a reasonable basis for required improvements of Nissan Stadium, based on the experience of comparable facilities, as defined in the 1996 lease

Proposed New Dome Stadium

- Total Cost: $2.1 billion
- Public: $1.26 billion
  - State: $500 million
  - Metro: $760 million
- Titans/NFL: $840 million
- Public contribution of 57%

How does this compare to other stadium deals?


Median Stadium Construction Costs by Decade
Construction Cost (millions of 2020 dollars)
Public Share (%)
Decade
Total Cost
Public Cost
Public Share
Titans Dome
1960s
1970s
1980s
1990s
2000s
2010s
2020s
100%
100%
54%
82%
68%
47%
42%
57%
$173
$200
$287
$287
$147
$231
$281
$342
$353
$572
$538
$1,146
$750
$1,970
$1,260
$2,100

Metro Funding Plan

- Hotel Tax: 1% fee on all hotel stays
  - Not a use tax: Most stadium spectators live in Nashville
  - Not a "tourist tax" (tax incidence)
- Stadium District Sales Tax diversion
  - State and local sales tax collections related to sales within an area of up to 130 acres contiguous to the new stadium (50%)
- Ticket taxes (rent), In-stadium sales tax diversion

Hotel Revenue from Stadium Events

- Hotel tax revenue is not windfall gain
  - Dome may add some new hotel stays
    - Limited replacing existing stadium
  - Events displace existing visitors
  - Different effects by hotel location
    - Downtown vs metro area

- What about the Super Bowl?
  - Houston (2017): ↑ ~$44 million hotel revenue
  - 1% tax ➔ $440,000

Source: Heller, L. R., & Stephenson, E. F. (2021). How does the Super Bowl affect host city tourism? *Journal of Sports Economics* (link)

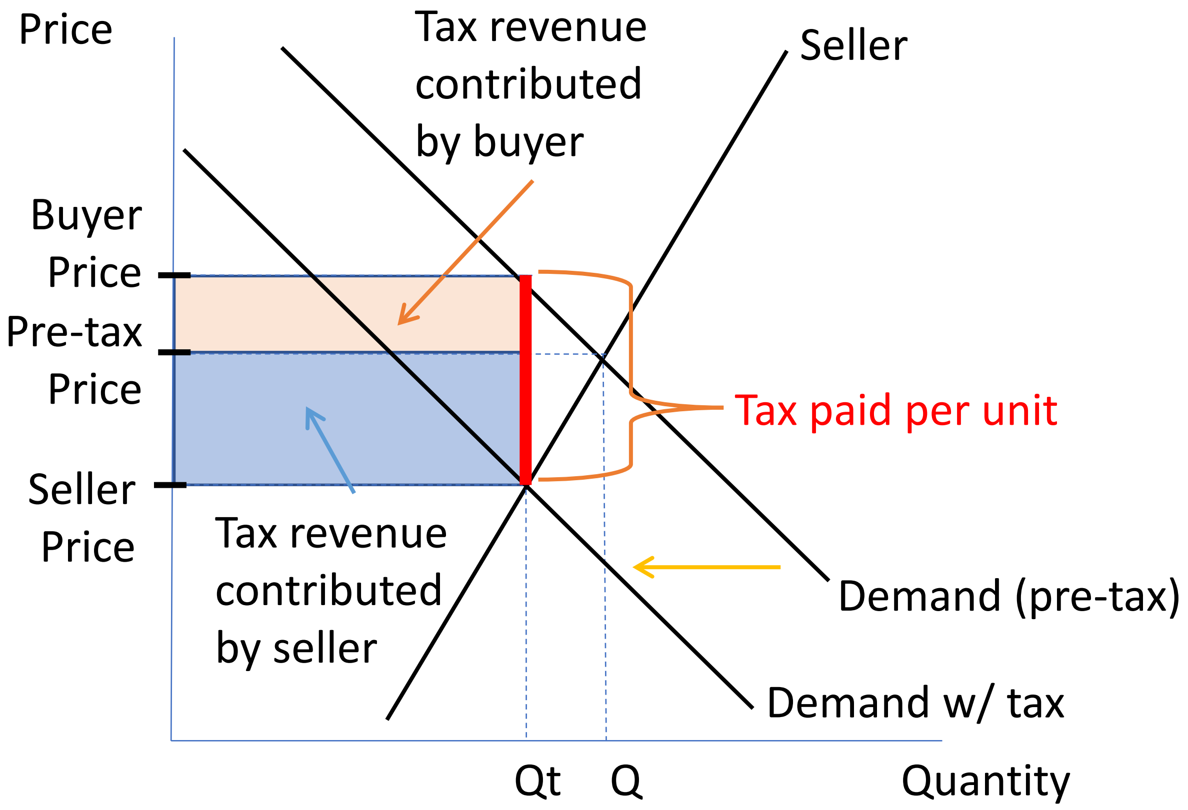
> The rhetoric of event promoters often implies that all events are expected to encourage visitors to come days before the event or stay for days after the event. The estimation results for Charlotte show that there is no common theme to the temporal or geographic impact of events on hotel registrations and hotel revenues. Some events have positive tourism effects, some have negative "crowding out" effects, and still others have no net impact on hotel registrations even during the event. Thus, the evidence suggests that increased tourism, and associated increased tourism-related tax revenue, is a rather tenuous reason to justify public subsidies of venues and events.

Source: Depken, C. A., & Stephenson, E. F. (2018). Hotel demand before, during, and after sports events: Evidence from Charlotte, North Carolina. *Economic Inquiry*, link)

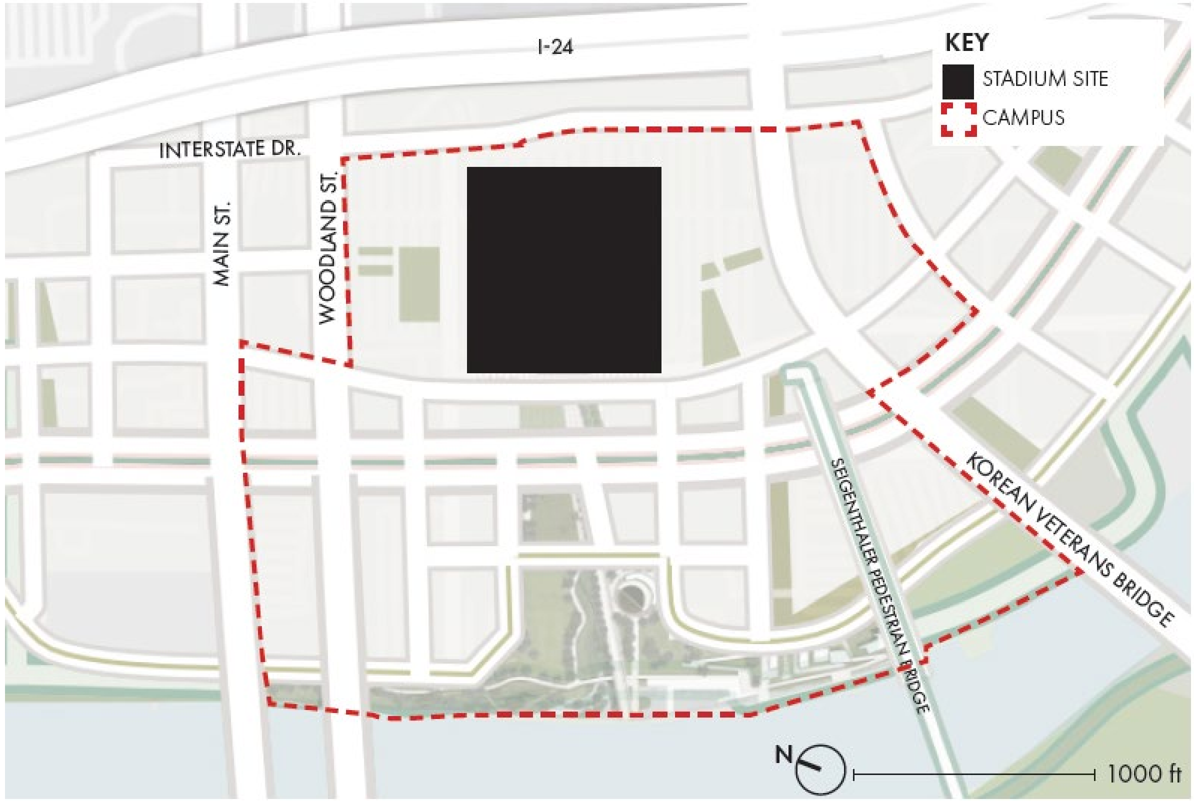
Hotel taxes are not paid just by tourists

- Higher room cost from tax deters hotel stays ➔ hotels ↓ prices
- Unclear who bears larger share, but it is not true it is paid entirely, or in large part, by tourists
  - ECON 101
- Tax burdens are determined by buyer and seller sensitivities to prices (price elasticity).
  - If buyers are less sensitive ➔ pay larger share
  - If sellers are less sensitive ➔ pay larger share

Buyer Pays Tax

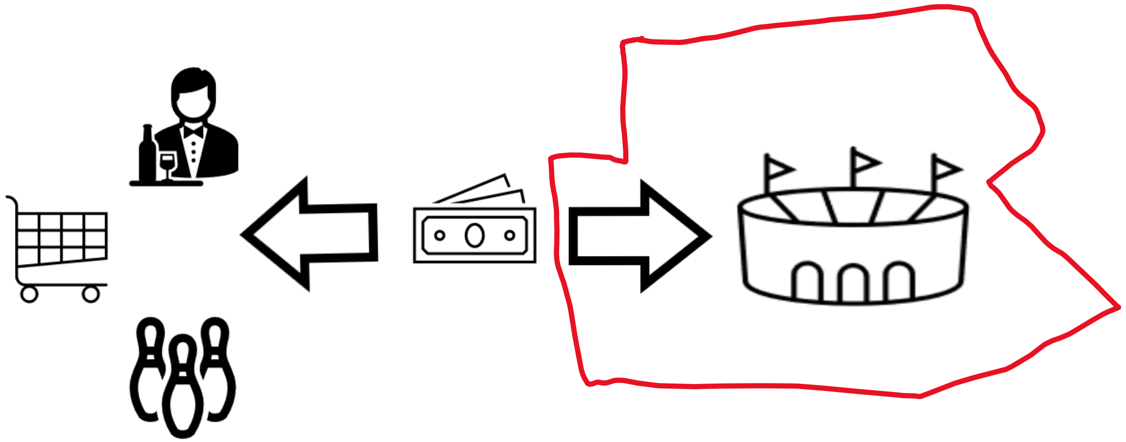


Stadium Tax District Creation



- The Authority and the Metropolitan Government will develop or cause to be developed those areas of the Campus outside of the Stadium Site, including the Stadium Village (the "Campus Development Project")
- The Metropolitan Government shall be responsible for the design, construction and funding of all necessary infrastructure for the development and proper functioning of the balance of the Campus"

Stadium District Sales Tax Revenue



- Tax revenue collected from surrounding campus is not new revenue
- Spending in a new East Bank development will come largely from elsewhere in the Metro, where sales tax collections funded other government priorities
- Revenue diverted to stadium ➔ ↑ taxes or ↓ public services/investments
- No free lunch

Relies on Funding from Speculative Development

- Stadiums have a lousy track record of promoting economic development
- Metro bears the cost of development
- Spend more money in the hope of generating revenue to cover cost of stadium and development
- Even if completed, not likely to generate new tax revenue to fund project
- Poor strategy

"Unless there is a guaranteed level of unsubsidized real estate investment, economic impact studies should avoid the inclusion of surrounding development ... new real estate development adjoining a professional sports venue results from simply a move of economic activity away from other sites within the jurisdiction. Unless residents perceive this intrajurisdictional shift in economic activity as a social benefit, this is a zero-sum gain for the jurisdiction."

– Wassmer, R. W., Ong, R. S., & Propheter, G. (2016). Suggestions for the needed standardization of determining the local economic impact of professional sports. *Economic Development Quarterly* (link).

Total Public Cost of New Stadium

- Direct stadium construction costs
  - Metro taxpayer cost: $810 million
    - Direct funding : $760 million
    - 10% of state $500 million contribution: $50 million
  - $450 million contributed by non-Metro state taxpayers
    - Expectation of state funding for stadiums in other Tennessee cities

  \+ Campus Development Project costs

  \+ Parking costs (2,000+ spaces)

  \+ Capital repairs reserve fund, etc.
- Beware Fiscal Illusion: Metro burden not funded just by visitors
  - Funding comes from existing tax base, no matter the tax instrument
  - Whether funding comes from property taxes, sales taxes, the water fund, or other new taxes, Metro's obligation burdens local taxpayers
- Cost > $760 million
- Revenue sources are speculative

Conclusions

- Renovations of comparable facilities in lease indicates expected renovations are closer to $200 million than $2 billion.
- Cost of proposed stadium is on the high end of recent stadium construction costs
  - Public contribution: $1.26 billion (57%)
  - Median 2020s subsidy: $750 million (42%)

The Reality: Sports stadiums are not economic development catalysts

- From our survey of more than 130 studies spanning 30 years:

> *recent analyses continue to confirm the decades-old consensus of very limited economic impacts of professional sports teams and stadiums. Even with added nonpecuniary social benefits from quality-of-life externalities and civic pride, welfare improvements from hosting teams tend to fall well short of covering public outlays. Thus, the large subsidies commonly devoted to constructing professional sports venues are not justified as worthwhile public investments.*

– Bradbury, J.C., Coates, D. & Humphreys. B.R. (2022, link)

Sirens' call *…but this this one will be different!*

This stadium:

"…will pay for itself from day one."

"…won't cost taxpayers one penny."

"…will be a significant fiscal plus…that is more than self-financing."

- Actual statements about proposed stadium projects, claiming some unique characteristic that makes this one an exception, but they have turned out to be not true.